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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,864	01/26/2001	Douglas M. Albert	IRV1.PAU.40	7129

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EXAMINER	
TRINH, MINH N	
ART UNIT	PAPER NUMBER
3729	

DATE MAILED: 08/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/770,864	ALBERT ET AL.	
	Examiner	Art Unit	
	Minh Trinh	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 June 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) *4, 7-10,13-19 and 22-35* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,6,11,12,20 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Applicant's election of Group 1A and related species 2A, 3A and 4A (claims 1-3, 5-6, 11-12 and 20-21) in Paper No. 5 is acknowledged. With respect to the identifying of species 2A and 3A, the Examiner agreed that claims 2-3, 5 and 6, which are readable on species 2A, and claim 11, which is readable on species 3A and will be considered on the merits.

2. Thus, claims 4, 7-10, 13-19 and 22-35 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 5. An Office Action on the merits of claims 1-3, 5-6, 11-12 and 20-21 follows.

3. The title of the invention is not descriptive. A new title i.e., "Method of making multi layer ... " is required that is clearly indicative of the invention to which the claims are directed.

4. The abstract of the disclosure is too long and it should be revised to reflect method invention and should be within the range of 50 to 150 words. Appropriate correction required. See MPEP § 608.01(b).

Claim Objections

5. The claims 20-21 are objected to because they depend on non-elected claims 18-19. Appropriate correction required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-3, 5-6, 11-12, and 20-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear whether "a microcircuit"(claim 1, line 4) is the same as " a microcircuit layer" as represented in the preamble; and is the "a plastic encapsulated microcircuit"(claim 1, line 3) is the same as one claimed in line 6.

The scope of claim 1-3, 5-6, 11-12, and 20-21 is not clear, because the method contains structure limitations of the microcircuit i.e., having an active surface ... (see claim 1, step (a) and (b) and others. Appropriate correction required.

The term "that" (claim 1, line 3) is unclear as to what exactly structure applicants are directly referring to.

It is not clear what applicants are referring as "modifying", and what is actually involved in such "modifying" step. Please clarify.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-3, 6 and 11 as best understood are rejected under 35 U.S.C. 102(b) as being anticipated by Conru et al (US 5,086,018).

Conru et al disclose substantially every claimed method limitations of the present invention including providing a plastic encapsulated microcircuit (PEM) 52 that includes a microcircuit having an active surface containing IC and bonding pad 53 and an encapsulant 56 in contact with microcircuit 52 (see Figs 5-6, which shows the microcircuit 52 with bonding pad 53, wires bonds 54 and many associated with this structure thereof, discussed at col. 4, lines 40-68, cols. 6-7); modifying the PEM to produce the modified PEM having a modified surface on which modified surface is exposed a conductive member and electrically connected the modified PEM to the bond pad (as described in figure 5, that shows the modifying step wherein at least one conductive member 51 is exposed). Note that the process of figure 5 of Conru et al is met the broadly claimed modyfying the surface of the PEM of the present invention.

As applied to claim 2, Conru et al disclose the forming lead on the modified PEM to an edge of the modified PEM (see Figs 5-6, see Ref. 51 or 51b or 51a, that leads from the surface of modified PEM to the Edge of the same PEM).

As applied to claim 3, Conru et al shows the pre-tested circuit (see Fig. 5, and discussed in abstract bottom section).

As applied to claim 6, Conru et al shows the covering the lead by applying insulation layer (see col. 6, lines 11-15, lines 35-40).

Limitation of claim 11 is also met as set forth above.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claim 3 as best understood, in the alternatively is rejected under 35 U.S.C. 103(a) as being unpatentable over Conru et al in view of Falcone et al (US 5,836,071)

As applied to claim 3, if it is argued that Conru et al do not teach the pre-tested circuit, Falcone et al teach such that concept (see Fig. 1, which shows the process of pre tested circuit 20, col.1, lines 65-67, col. 3, lines 40-44, etc.,). Therefore, it would have been an obvious to employ such teaching of pre-tested circuit as taught by Falcone et al onto the method invention of Conru et al for detecting and testing purpose, minimizing circuit failures would result.

12. Claim 5, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Conru et al in view of Beilstein, Jr. et al (US 5,46,634). 8/2002

Conru et al as modified and relied upon above meet every aspect limitations of the present invention with the exception of thinning a backside of the modified PEM.

Beilstein, Jr. et al teach the above reducing the thickness by numbers of techniques including that above concepts i.e., thinning (see discussed at col. 9, lines 29-33, etc.,). Therefore, it would have been obvious to one ordinary skill in the art, at the time of the invention to employ the known concept of reducing the thickness by thinning, in light teachings of Beilstein, Jr. et al onto the method invention of Conru et al to form a desired size and shape, as so to simplify the production steps by using the available techniques.

13. Claims 20-21 as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Conru et al in view of Beilstein, Jr. et al.

As applied to claim 20, Conru et al or Beilstein, Jr. et al as modified do not teach the conductive member is a gold ball bond. With respect to the materials selection, i.e., gold ball conductive member recited in claim 20 etc. It would have been obvious to one having skill in the art to incorporate the gold ball conductive member in to the invention since it was known in the art that selecting a material from a host of group of available materials on the basis of its suitability for the intended use as a matter of obvious design choice.

As applied to claim 21, Beilstein, Jr. et al teach thinning by grinding or mechanical technique, which is including grinding and polishing (see discussed at col. 9, approximate lines 20-25).

14. Claim 12 as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Conru et al.

Conru et al do not teach the conductive member is a gold ball bond. With respect to the materials selection, i.e., gold ball conductive member as recited in claim 12 etc. It would have been an obvious matter of design choice to choose any desired conductive member such as solder paste, conductive pad, etc., since applicant has not disclosed that the gold ball would solve any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the conductive pad taught by the applied art. Further, it would have been obvious to one having skill in the art to incorporate the gold ball conductive member in to the present invention since it was known in the art that selecting a material from a host of group of available materials, i.e., solder ball, etc., on the basis of its suitability for the intended use as a matter of obvious design choice.

Prior Art References

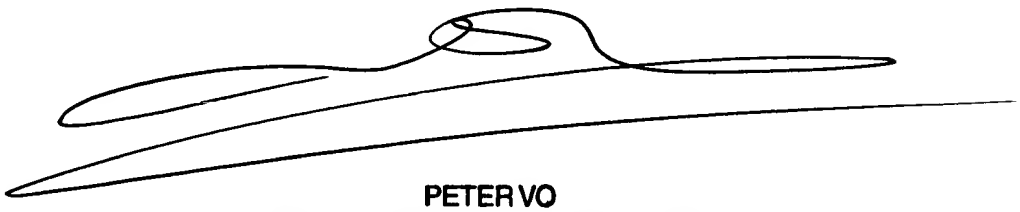
15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Prior art references are cited for their teaching of method of stacking PEM devices.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Trinh whose telephone number is (703) 305-2887. The examiner can normally be reached on Monday -Thursday 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (703) 308-1789. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7307 for regular communications and (703) 305-3579 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.



mt
August 7, 2002

PETER VO
SUPERVISORY PATENT EXAMINER
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